

**WHAT IS CLAIMED IS:**

1. A method for serving a packet dormant handoff, comprising:  
  
determining with a mobile switching center whether a mobile station performs a dormant handoff into an area of a destination base station controller/ packet controller function (BSC/PCF); and  
  
providing information of the dormant handoff from the mobile switching center to an original BSC/PCF, when the mobile station performs the dormant handoff.
2. The method of claim 1, wherein the dormant handoff information includes a location renewal message.
3. The method of claim 1, wherein the information of the dormant handoff is provided after setting a radio packet link with the destination BSC/PCF and a destination packet data serving node.
4. The method of claim 2, wherein a cause value element of the location renewal message is the packet dormant handoff.
5. The method of claim 1, further comprising releasing a radio packet link between the original BSC/PCF and the mobile station by transferring a registration request message from the original BSC/PCF to an original packet data serving node (PDSN).

6. The method of claim 5, further comprising:  
removing a visitor table of a corresponding mobile station when the original PDSN receives the registration request message from the original BSC/PCF; and  
transmitting charging data to a corresponding sever.

7. The method of claim 6, further comprising;  
releasing the radio packet link in response to the registration request message; and  
removing, at the original BSC/PCT, a radio packet link table of the mobile station.

8. The method of claim 7, wherein the packet dormant handoff for the mobile station is completed at the original BSC/PCF by transmitting a location renewal acknowledge message from the original BSC/PCF to the mobile switching center, after transmitting a response to the registration from the original PDSN to the original BSC/PCF.

9. A method for serving a packet dormant handoff, comprising:  
discriminating with a mobile switching center whether a mobile station performs a dormant handoff into an area of a destination base station controller/ packet controller function (BSC/PCF); and

providing information of the dormant handoff from the mobile switching center to an original BSC/PCF, when the mobile station performs the dormant handoff;

transferring a registration request message from the original BSC/PCF to an original

packet data serving node (PDSN) for terminating a radio packet link between the mobile station and the original PDSN;

releasing the radio packet link in response to the registration request message; and

transmitting a location renewal acknowledge message from the original BSC/PCF to the mobile switching center.

10. The method of claim 9, further comprising:

transferring an A9-Update-A8 message from the original BSC/PCF to a packet controller function (PCF) of the original BSC/PCF, to inform the PCF that the mobile station has moved;

transmitting an A11 registration request message from the PCF to the original PDSN;

transmitting an A11 registration response message from the original PDSN to the PCF;

and

releasing the radio packet link at the original PDSN.

11. A method for serving a packet dormant handoff, comprising:

receiving, at a mobile switching center (MSC), location renewal information of a mobile station that is performing a dormant handoff;

determining whether the mobile station is in a state for executing the dormant handoff, when the location renewal information is received;

releasing a radio packet link by transferring registration renewal information from the MSC to a first base station controller/ packet controller function, if the mobile station is in the

state for executing the dormant handoff.

12. The method of claim 11, wherein the MSC receives the registration renewal information of the mobile station through an American National Standards Institute (ANSI)-41 message.

13. The method of claim 11, wherein a mobile switching center/visitor location register (MSC/VLR) stores information for a serving packet control function.

14. A method of performing a dormant packet handoff during a first communication link between a mobile station and a source packet data serving node (PDSN), comprising:

establishing a second communication link between the mobile station and a target PDSN, after the mobile station has moved from a service area of a source base station controller/packet control function (BSC/PCF) to a service area of a target BSC/PCF;

communicating a dormant handoff message from a mobile switching center (MSC) to the source BSC/PCF; and

terminating the first communication link between the mobile station and the source PDSN, in response to the dormant handoff message.

15. The method of claim 14, further comprising communicating from the source BSC/PCF to the MSC an acknowledgment of the dormant handoff message, after terminating the first communication link.

16. The method of claim 14, wherein the first communication link is terminated without waiting for a registration renewal timer period, an upper layer point-to-point protocol (PPP) timer period, or a radio packet link timer period to expire.

17. The method of claim 14, further comprising:

communicating from the source BSC/PCF to the source PDSN a registration request message having a lifetime field value set to zero, in response to receiving the dormant handoff message;

releasing resources supporting the first communication link within the source PDSN, in response to the registration request message;

communicating to the source BSC/PCF a registration response message having a lifetime field value set to zero, after releasing the first communication link; and

releasing resources supporting the first communication link within the source BSC/PCF, in response to the registration response message, wherein

the zero value in the lifetime field of the registration request message informs the source PDSN that the first communication link is ready for termination,

the zero value in the lifetime field of the registration response message informs the source BSC/PCF that the first communication link is ready for termination, and

both the source BSC/PCF and the source PDSN terminate the first communication link without waiting for a registration renewal timer period to expire.

18. The method of claim 17, further comprising communicating from the source BSC/PCF to the MSC an acknowledgment of the dormant handoff message, after the source BSC/PCF terminates the first communication link.

19. The method of claim 14, further comprising withholding the communication of a registration renewal message from the source PDSN to the source BSC/PCF, during a period beginning after the source PDSN receives the dormant handoff message and ending when the first communication link is terminated.

20. A communication system, comprising:  
a mobile station;  
a source packet data serving node (PDSN) that communicates with the mobile station, via a source base station controller/ packet control function (BSC/PCF), through a first communication link, while the mobile station is located within a service area of the source BSC/PCF;

a target PDSN that communicates with the mobile station, via a target BSC/PCF, through a second communication link, after the mobile station has moved from the service area of the source BSC/PCF to a service area of the target BSC/PCF;

a mobile switching center (MSC) that communicates a dormant handoff message to the source BSC/PCF, after the second communication link is established, wherein

the dormant handoff message initiates the termination of the first communication link by the source PDSN and the source BSC/PCF.

21. The system of claim 20, wherein the source BSC/PCF communicates an acknowledgment of the dormant handoff message to the MSC, after terminating the first communication link.

22. The system of claim 20, wherein the first communication link is terminated without waiting for a registration renewal timer period, an upper layer point-to-point protocol (PPP) timer period, or a radio packet link timer period to expire.

23. The system of claim 20, wherein:

- the source BSC/PCF communicates to the source PDSN a registration request message having a lifetime field value set to zero, after receiving the dormant handoff message;
- the source PDSN releases resources supporting the first communication link, in response to the registration request message;
- the source PDSN communicates to the source BSC/PCF a registration response message having a lifetime field value set to zero, after receiving the registration request message;
- the source BSC/PCF releases the first communication link, in response to the registration response message;
- the zero value in the lifetime field of the registration request message informs the source

PDSN that the first communication link is ready for termination;

the zero value in the lifetime field of the registration response message informs the source BSC/PCF that the first communication link is ready for termination; and

both the source BSC/PCF and the source PDSN terminate the first communication link without waiting for a registration renewal timer period to expire.

24. The method of claim 23, wherein the source BSC/PCF communicates to the MSC an acknowledgment of the dormant handoff message, after the source BSC/PCF releases the resources supporting the first communication link.

25. The method of claim 20, wherein the source PDSN withholds the communication of a registration renewal message to the source BSC/PCF, during a period beginning after the source PDSN receives the dormant handoff message and ending when the first communication link is terminated.

26. The method of claim 9, wherein the registration request message has a lifetime field value set to zero, for indicating an immediate termination of the radio packet link.